REMARKS

This paper is being provided in response to the August 23, 2006 Office Action for the above-referenced U.S. patent application. In this response, Applicants have amended claims 1 and 10 in order to clarify that which Applicants deem to be the invention. Applicants respectfully submit that the amendments to the claims are supported by the originally filed application. See, for example, page 55, lines 5-9 and the discussion beginning at the bottom of page 35.

The rejection of claims 1, 6, 10, and 15 under 35 U.S.C. 102 (b) as being anticipated by U. S. patent number 5,901,327 to Ofek (hereinafter "Ofek") is hereby traversed and reconsideration thereof is respectfully requested in view of amendments to the claims provided herein.

Claim 1, as amended herein, is for a method of using a local storage device to read desired data while the data is being stored on a remote storage using the cache of the local storage device in connection with transferring chunks of data from the local storage device to the remote storage device. If the desired data is entirely in a cache of the local storage device, the local storage device returns the data from the cache. If the desired data is not entirely in the cache of the local storage device, data for parts of a particular track is read from the remote storage device to the local storage device and the local storage device merges the data for the parts of the particular track from the remote storage device with data corresponding to different parts of the particular track from the cache of the local storage device at the local storage device

to interleave the parts for the particular track from the remote storage device with the different parts for the particular track from the local storage device. Claim 6 depends from claim 1.

Claim 10, as amended herein, is for computer software, stored in a computer-readable medium, that reads desired data while the data is being stored on a remote storage device using the cache of the local storage device in connection with transferring chunks of data from a local storage device to the remote storage device. The software includes executable code that returns the data from the cache if the desired data is entirely in a cache of the local storage device. The software also includes executable code that reads data for parts of a particular track from the remote storage device to the local storage device and merges the data for the parts of the particular track from the remote storage device with data corresponding to different parts of the particular track from the cache of the local storage device at the local storage device if the desired data is not entirely in the cache of the local storage device to interleave the parts for the particular track from the remote storage device with the different parts for the particular track from the local storage device. Claim 15 depends from claim 10.

The present claimed invention reads data from a remote storage device as the data is being transferred from a local storage device to the remote storage device by first checking if the data is in the cache of the local storage device. If the data is available in the cache of the local storage device, the data being read from the remote storage device is obtained from the cache of the local storage device. Thus, the present claimed invention reads data being stored on the remote storage device without having to always obtain the data from the remote storage device since, in some cases, data being stored on the remote storage device is in the cache of the local

storage device. In addition, if the data being read from the remote storage device is not entirely available from the cache of the local storage device, data for parts of a particular track from the remote storage device is read to the local storage device and merged with data corresponding to different parts of the particular track from the cache of the local storage device at the local storage device to interleave the parts for the particular track from the remote storage device with the different parts for the particular track from the local storage device. Accordingly, even if all of the desired data for a particular track is not available from the cache of the local storage device, the present claimed invention interleaves parts of the particular track from the remote storage with different parts of the particular track from the cache of the local storage device. Thus, it is not necessary to always obtain en entire track's worth of data from the remote storage device in instances when the entire track is not available at the local storage device.

Ofek discloses a system and method for automatically providing and maintaining a copy or mirror of data stored at a location remote from the main or primary storage device. Data is retrieved from a remote device through a host data processing system. The host 12 writes data to and reads data from the primary data storage system 14. The host central processing unit 212 can also be provided with host remote mirroring software 213 so that the data processing system can be configured and monitored from a user interface of the host central processing unit. Host application programs can also interface with the remote mirroring facility of the data storage systems 214, 246 via the host remote mirroring software 213. During a read access, the channel adapter accesses the cache. If the data requested by the host is not found in the cache, the data is fetched by a disk adapter from the disk storage in the data storage system and loaded into the cache. Column 14 beginning at line 43 of Ofek discloses that, under the abnormal condition of

the data being entirely absent from the data storage system due to a disk drive failure, requests for data access to a primary volume (R1) can be satisfied by obtaining the requested data from the secondary volume (R2) in the remote data store system.

Thus, Ofek discloses that data that may be obtained from the cache of the local storage device or, if the data is not available in the cache of the local storage device, may be obtained from a disk drive of the local storage device. Ofek also discloses that, in instances where the local storage device has failed, the data may be obtained from the remote storage device. However, in instances where data is not available at a local storage device (i.e., "abnormal conditions" discussed in column 14), Ofek does not disclose merging data corresponding to parts of a particular track from the remote storage device with data corresponding to different parts of the particular track in the cache.

Applicants respectfully submit that Ofek does not show, teach, or suggest features recited in independent claims 1 and 10, including the feature of merging data for parts of a particular track from the remote storage device with data corresponding to different parts of the particular track from the cache of the local storage device to interleave the parts for the particular track from the remote storage device with the different parts for the particular track from the local storage device. At best, Ofek merely discloses obtaining data from the remote storage device under the abnormal condition of the local storage device having failed, in which case it's not clear that there would be *any* data from different parts of a track to be merged with data obtained from the remote storage device. In any event, Ofek in no way discloses such a possibility. That is, Ofek does not disclose the possibility of the local storage device having failed while the local

cache still contains valid data and Ofek certainly does not disclose the possibility of obtaining data corresponding to parts of a particular track from a remote storage device and interleaving the data with different parts of the particular track in the local cache, as recited in the present claims.

Accordingly, for reasons set forth above, Applicants respectfully request that this rejection be withdrawn.

The rejection of claims 2, 7-9, 11, and 16-18 under 35 U.S.C 103(a) as being unpatentable over Ofek in view of U.S. patent number 6,880,045 to Pong et al. (hereinafter "Pong") is hereby traversed and reconsideration thereof is respectfully requested.

Claims 2 and 7-9 depend from claim 1, discussed above. Claims 11 and 16-18 depend from claim 10, discussed above.

The Ofek reference is discussed above.

As set forth in the Office Action, Pong teaches prior to reading data from the remote storage device to the local storage device, creating a temporary storage device at the local storage device if there is data from the local storage device that is to be read.

Applicant respectfully submits that the deficiencies of Ofek with respect to claims 1 and 10, discussed above, are not overcome by the addition of the Pong reference. Accordingly, Applicant respectfully requests that this rejection be withdrawn.

The rejection of claims 3-5, and 12-14 under 35 U.S.C 103(a) as being unpatentable over Ofek and Pong and further in view of U.S. patent number 6,012,063 Bodnar et al. (hereinafter "Bodnar") is hereby traversed and reconsideration thereof is respectfully requested.

Claims 3-5 depend from claim 1, discussed above. Claims 12-14 depend from claim 10, discussed above.

The Ofek and Pong references are discussed above.

As set forth in the Office Action, Bodnar teaches having a temporary storage area that si a scratch slot.

Applicant respectfully submits that the deficiencies of Ofek (and Pong) with respect to claims 1 and 10, discussed above, are not overcome by the addition of the Bodnar reference. Accordingly, Applicant respectfully requests that this rejection be withdrawn.

Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
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Date

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